LOWER POWDER VALLEY PROJECT, BAKER COUNTY, OREG.

By JOHN H. LEWIS, State Engineer.

An important step was taken by the Desert Land Board on September 27, looking to the reclamation of 73,000 acres in Lower Powder Valley, about 14 miles northeast of Baker, in Baker County, Oreg. This project, if constructed, will be one of the most complete in the State if not in the entire West, as almost the entire system will be built of concrete and steel. A final contract has been executed by the Desert Land Board which will become binding on the State when a bond for $87,000 is put up and construction work commenced within 18 months. The estimated cost is $3,961,129 and the lien allowed $4,388,000. This, when distributed on 43,915 acres of Carey Act land, will mean a cost of $100 per acre. This land, however, is scattered among a considerable area of patented land which is now under cultivation and demonstrates the value of the country for agricultural purposes.

The principal source of water supply will be obtained by the construction of a 110-foot dam at the lower end of Thief Valley, about 10 miles upstream from the land to be irrigated. This dam will store 65,000 acre-feet of water, creating a lake which will come within a few feet of flooding the O. W. R. & N. track where it crosses Powder River. The direct flow of the stream will be used as long as floods continue. A 520 second-foot capacity canal will lead from this reservoir to the land, where it will divide, one branch crossing the river channel in an inverted steel and concrete syphon, and the two branches will cover a total of 43,915 acres.

The lands on the north side of the river above the North Canal from Thief Valley will be watered by storage in Balm Creek, supplied by a 10-mile feed canal of 313 second-feet capacity from Eagle Creek, with supplementary storage in West Eagle Reservoir. The Balm Creek Dam will be 150 feet in height and store 16,200 acre-feet. The West Eagle Dam will be built as high as necessary to furnish the required water, and not to exceed 130 feet in height, storing 14,700 acre-feet.

With a duty of 1.9 acre-feet on the land, the water supply, from the available information, appears sufficient for the irrigation of 59,000 acres of irrigable land. Detailed specifications are provided calling for the use of concrete and steel construction almost throughout, and the distributing system, where canals are not on grade, will be built of reenforced concrete pipe. This permanent construction will be carried to within one-fourth mile of each 160-acre tract to be watered, from which point wooden flumes or drops may be used in delivering water to the lands in question.

Great stress has been laid by the State on the collection of thorough engineering data and information. This is not only necessary for the settlers' protection, but with an expensive project of this character is absolutely essential to the successful financing of the project.